

(19) World Intellectual Property
Organization
International Bureau



Rec'd PCT/PTO 12 JUL 2005



10/541903

(43) International Publication Date
29 July 2004 (29.07.2004)

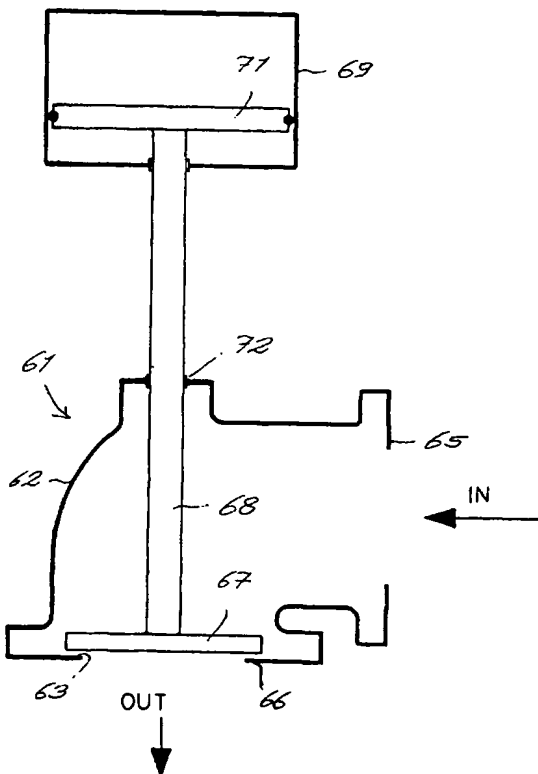
PCT

(10) International Publication Number
WO 2004/062392 A3

- (51) International Patent Classification⁷: A23N 7/00, F16K 24/00
- (21) International Application Number: PCT/IE2004/000003
- (22) International Filing Date: 12 January 2004 (12.01.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
2003/0015 13 January 2003 (13.01.2003) IE
- (71) Applicant (for all designated States except US): OSENEY LIMITED [IE/IE]; Unit 2005, City West Business Campus, Naas Road, Dublin 24 (IE).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): BRODERICK, Michael [IE/IE]; Pollerton Big, Co. Carlow (IE).
- (74) Agents: WALSH, Michael, Joseph et al.; Tomkins & Co., 5 Dartmouth Road, Dublin 6 (IE).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,

[Continued on next page]

(54) Title: PRESSURE RELEASE ARRANGEMENTS, IN PARTICULAR FOR PRODUCT PROCESSING SYSTEM



(57) Abstract: A valve (61) for enabling release of pressurized steam from a pressure vessel has a displaceable closure member (67) which is maintained in its closed disposition by exposure to the pressure of the steam within the pressure vessel. The closure member (67) is displaced between its closed disposition and an open disposition by a double-acting actuator (69), suitably an air-driven piston/cylinder device, the closure member (67) being preferably mounted at one axial end of a spindle (68) extending between the closure member (67) and the actuator (69). The closure member (67) is suitably mounted for substantially metal-to-metal contact with a valve seat portion (63), without interposition of any sealing element, preferably for substantially vertical displacement between its closed and dispositions.

WO 2004/062392 A3



TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:

28 October 2004

INTERNATIONAL SEARCH REPORT

Int. Oral Application No.

PCT/IE2004/000003

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7: A23N7/00 F16K24/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7: A23N F16K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 811 279 A (VOGELI E) 21 May 1974 (1974-05-21) abstract; claims; figure 1	1-9
X	US 4 589 627 A (GROTLOH KARLHEINZ) 20 May 1986 (1986-05-20) abstract; claims; figure 1	1-9
A	WO 01/93704 A (BRODERICK MICHAEL ; OSENEY LTD (IE)) 13 December 2001 (2001-12-13) cited in the application abstract; claims 49-52; figures 8,9,15	11,13-18
A	US 4 064 794 A (KUNZ PAUL) 27 December 1977 (1977-12-27) the whole document	11,13
	----- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

6 May 2004

Date of mailing of the international search report

03.09.2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Gaiser, M

INTERNATIONAL SEARCH REPORT

International Application No.
PCT/IE2004/000003

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3 164 181 A (PAUL KUNZ) 5 January 1965 (1965-01-05) the whole document	11, 13
A	EP 0 431 702 A (GOUDSCHE MACHINEFABRIEK BV) 12 June 1991 (1991-06-12) abstract; figure 1	1, 11, 13

INTERNATIONAL SEARCH REPORT

ational application No.
PCT/IE2004/000003

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-11, 13-18

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-11, 13-18

a valve that is maintained in its closed disposition by exposure to the pressure inside the vessel to be sealed, and treatment system utilising such a valve

2. claim: 12

a product treatment system comprising a solids trap

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/IE2004/000003

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 3811279	A	21-05-1974	CH 524091 A BE 767548 A1 CA 940796 A1 DE 2028544 A1 DE 2065050 A1 ES 391527 A1 FR 2090311 A5 GB 1296173 A IT 953107 B JP 49036449 B NL 7014719 A ,B SE 372971 B	15-06-1972 24-11-1971 29-01-1974 09-12-1971 27-04-1972 01-08-1974 14-01-1972 15-11-1972 10-08-1973 01-10-1974 17-11-1971 20-01-1975
US 4589627	A	20-05-1986	NONE	
WO 0193704	A	13-12-2001	IE 20000456 A1 AU 6418501 A CN 1443044 T EP 1289385 A1 WO 0193704 A1 US 2003170364 A1	12-12-2001 17-12-2001 17-09-2003 12-03-2003 13-12-2001 11-09-2003
US 4064794	A	27-12-1977	DE 2325293 B1 DE 2360886 A1 BE 814004 A1 BG 30462 A3 CA 1006105 A1 DD 110927 A5 ES 424063 A1 ES 424064 A1 FR 2229358 A1 FR 2229901 A1 GB 1448160 A HU 173237 B IE 39973 B1 IL 44829 A IT 1008195 B IT 1008799 B JP 947545 C JP 50009815 A JP 53022968 B JP 1028723 C JP 50006762 A JP 55018517 B NL 7402409 A ,B, RO 70204 A1 SU 567418 A3 US 3959506 A AU 7624074 A	29-08-1974 19-06-1975 16-08-1974 15-06-1981 01-03-1977 12-01-1975 01-10-1976 01-06-1976 13-12-1974 13-12-1974 02-09-1976 28-03-1979 14-02-1979 30-12-1977 10-11-1976 30-11-1976 20-04-1979 31-01-1975 12-07-1978 22-01-1981 23-01-1975 19-05-1980 20-11-1974 24-03-1982 30-07-1977 25-05-1976 10-06-1976
US 3164181	A	05-01-1965	DE 1234690 B	23-02-1967
EP 0431702	A	12-06-1991	NL 8902983 A CA 2031171 A1 EP 0431702 A1 FI 905931 A IE 904359 A1 JP 3208602 A	01-07-1991 05-06-1991 12-06-1991 05-06-1991 05-06-1991 11-09-1991

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IE2004/000003

Patent document
cited in search report

Publication
date

Patent family
member(s)

Publication
date

EP 0431702

A

NO

905224 A

05-06-1991